



# Illinois Department of Natural Resources

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JB Pritzker, Governor  
Colleen Callahan, Director

## **Authorization for Incidental Take and Implementing Agreement**

Pursuant to the Illinois Endangered Species Protection Act (Act) (520 ILCS 10/5.5) and the regulations adopted to implement the Act (17 Ill. Adm. Code 1080), authorization is hereby granted to Union Pacific Railroad (hereinafter referred to as UPRR), for the incidental take of the Federally and State-endangered Higgins Eye (*Lampsilis higginsii*) and the State-threatened Butterfly (*Ellipsaria lineolata*) mussels. The Illinois Department of Natural Resources (hereinafter referred to as Department) has determined that this taking is incidental to Union Pacific's Clinton Railroad Bridge Replacement Project in Pool 14 of the Mississippi River between Clinton, Clinton County, Iowa, and Fulton, Whiteside County, Illinois. The project area lies approximately 7 river miles upstream of the Mississippi River – Cordova Illinois Natural Areas Inventory Site (INAI #1296) designated due to unusual concentrations of mussel species.

### **Procedural History**

A Conservation Plan prepared by Jacobs, on behalf of UPRR, was submitted to the Department on June 21, 2018, as a request for authorization for the incidental take of Higgins Eye and Butterfly. The Department requested additional information on July 25, 2018, to make the Conservation Plan complete as prescribed by Ill. Adm. Code 1080.10. Additional information was received by the Department on June 6, 2019. The final Conservation Plan was accepted as complete by the Department on August 19, 2019. The public notice period and public comment will be detailed under #6 of the Compliance section below.

Due to the inclusion of federally-listed species in the Conservation Plan, the State of Illinois is bound by a Section 6 Cooperative Agreement with the US Fish and Wildlife Service (USFWS) under the authority of the Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq) and the Act, whereby the State shall not issue a permit authorizing take without prior issuance of a permit or formal decision otherwise by the USFWS. On August 19, 2019, the USFWS issued a Biological Opinion to the US Coast Guard concluding that the Clinton Railroad Bridge Replacement Project is not likely to result in jeopardy of Higgins Eye, nor will critical habitat be affected by the project.

Throughout the development of this project, UPRR consulted USFWS, the Iowa Department of Natural Resources, and the Department to create a coordinated mitigation response that satisfied all three agencies for incidental or unavoidable impacts to resources.

## **Compliance with the Illinois Endangered Species Protection Act**

The Act includes six criteria which must be satisfied for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each are listed below.

1. The taking will not be the purpose of, but will be only incidental to, the carrying out of an otherwise lawful activity:

The stated and apparent purpose of this proposed action is to replace the UPRR's Clinton Railroad Bridge across the Mississippi River located between Clinton, Clinton County, Iowa, and Fulton, Whiteside County, Illinois. The project's action area crosses Pool 14 in the Mississippi River near River Mile 518.0. The US Coast Guard determined that the existing swing-span bridge is an "unreasonable obstruction to free navigation" and issued an Order to Alter to UPRR as the bridge owner. The mandatory Order to Alter identified the need to increase the horizontal opening for navigation purposes and set expectations for the vertical clearance of the proposed replacement structure.

The proposed action consists of construction of a new 60-foot-wide, approximately 0.86-mile-long bridge, 300 feet downstream of the existing bridge location; followed by the demolition of the existing bridge. The existing bridge will remain open during construction of the new bridge and will be demolished once the new bridge is operational. UPRR anticipates a 4-year project duration. Temporary marine trestles, a rock causeway and improved roadways will be installed for access and as workstations and will remain in place throughout the construction and demolition timeframe. Barges and other small watercraft will be used to transport equipment and workers, as well as to serve as workstations. Barges may be spudded up to a year. Mechanical dredging may be needed to provide barge access. Seven (7) new piers will be constructed on the Illinois side of the Mississippi River and Cattail Slough utilizing cofferdams or a similarly engineered system. Temporary dolphins will be installed in the main channel near the only proposed Illinois main-channel pier to provide a landing site to prepare the truss for erection. Demolition is anticipated to occur in 2025. These activities will be staged from the marine trestles and will involve a combination of conventional mechanical and, within main channel, explosive demolition and salvage methods. Up to 55 piers from the existing railroad bridge and the old US Highway 30 will be removed.

The proposed bridge replacement may result in direct burial, crushing, or excavation of, and/or sedimentation or turbidity impacts to, and/or noise and vibration disturbance to the Higgins Eye and Butterfly, their glochidia, and/or their glochidial host fish.

The Mississippi River at the bridge crossing consists of four channels or sloughs, divided by islands. The action area (from west to east or Iowa to Illinois) includes

the main Mississippi River channel, Willow Island West channel, Willow Island East channel, and Catfish Slough (also known as Sunfish Slough). Within Illinois, the total estimated area of impact for species habitat is **9.37 acres**. The Department concurs that the take of the Higgins Eye and Butterfly that could result from the proposed project is not the purpose of UPRR's activities but is incidental to the carrying out of an otherwise lawful activity.

2. The parties to the Conservation Plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking:

Proposed avoidance, minimization and mitigation were included in UPRR's Conservation Plan.

To meet the "maximum extent practicable" standard, additional minimization and/or mitigation measures may be required beyond those proposed by UPRR, based on the life history needs of the Higgins Eye and Butterfly. **All required minimization and mitigation measures are presented under the Authorization section below.**

3. The parties to the Conservation Plan will ensure that adequate funding for the Conservation Plan will be provided.

UPRR commits to funding all costs associated with supporting and implementing the actions outlined in their Conservation Plan. The costs of mitigation activities will be incorporated into the overall project budget.

The Department accepts this provision as assurance that adequate funding will be available to carry out the terms of the Conservation Plan.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of survival or recovery of the endangered species or threatened species in the wild within the State of Illinois, the biotic community of which the species is a part, or the habitat essential to the species' existence in Illinois.

**Higgins Eye (*Lampsilis higginsii*)** is a Federally endangered and Illinois state-endangered mussel species.

**Habitat:** Higgins Eye is a medium-sized mussel known to inhabit large rivers. Its preferred habitat consists of plant-free, stable areas of mixed sand and gravel. It is unlikely to be found in areas of shifting sands or silt.

**Reproduction:** Higgins Eye are long-term brooders. Females will retain developing glochidia in their gills over winter and release them from June to July. Glochidia will parasitize Sauger, Largemouth Bass, Smallmouth Bass, Walleye, Yellow Perch, Black Crappie, and Green Sunfish.

**Population:** The species is rare or extirpated from much of its historical range. Decline is due to poor habitat conditions resulting from human river management,

non-point and point-source water and sediment pollution, the infestation of invasive zebra mussels, and early overharvest by the button and pearl industries. Higgins Eye was the first freshwater mussel species to gain federal protection in the United States.

**Range in Illinois:** Higgins Eye has only been found in the Mississippi River. The species has been observed in five (5) of 102 Illinois counties, including Whiteside, Rock Island, Henderson, Carroll, and JoDaviess. There are currently 12 extant Element Occurrence Records for Higgins Eye in the Illinois Natural Heritage Database.

**Incidental Take Authorizations:** The Department has eight (8) previously issued or pending Incidental Take Authorizations for Higgins Eye. Types of projects include bridge installations, dredging, pier removal, and dolphin installation. This is the second authorization for the taking of Higgins Eye in Whiteside County. The first was a barge dock installation 7 miles downstream in 2018.

Where conditions were safe, quantitative surveys for mussels occurred within, upstream, and downstream of the proposed project area in June 2017 and November 2018. In addition, mussels were cleared from geological boring sites in August and November 2017. Within Illinois, one (1) live Higgins Eye individual was found just downstream of Willow Island during the 2018 survey.

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**Butterfly (*Ellipsaria lineolata*)** is an Illinois state-threatened mussel species.

**Habitat:** The species is found in large rivers in areas with moderate to swift currents. They favor substrates of coarse sand and gravel.

**Reproduction:** Butterfly mussels are long-term brooders. Females retain developing glochidia in their gills from August until the following July. Glochidia are released and temporarily parasitize a host fish. Butterfly glochidial host fish include Freshwater Drum, Green Sunfish, and Sauger.

**Population:** Butterfly population decline is due to poor habitat conditions associated with river management, pollution, impacts from the invasive zebra mussel, and early overharvest by the button and pearl industries.

**Range in Illinois:** In Illinois, Butterfly mussels have been found in the Mississippi and Ohio Rivers in 12 of 102 counties. There are currently 29 extant Element Occurrence Records for Butterfly in the Illinois Natural Heritage Database.

**Incidental Take Authorizations:** The Department has 16 previously issued or pending Incidental Take Authorizations for Butterfly. Types of projects included dredging, construction of offshore structures, bridge removal and replacement, riprap installation, and boat dock installation. This is the second authorization for the taking of Butterfly in Whiteside County. The first was a barge dock installation 7 miles downstream in 2018.

Where conditions were safe, quantitative surveys for mussels occurred within, upstream, and downstream of the proposed project area in June 2017 and

November 2018. In addition, mussels were cleared from geological boring sites in August and November 2017. Within Illinois, three (3) live Butterfly individuals were found along the right descending bank of the Willow Island East channel during the 2018 survey.

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Based on the amount of habitat impacted by this project, the number of known occurrences of Higgins Eye and Butterfly in Illinois, an assessment of the potential effect of this project on individual species in the project footprint, the conservation methods included in this authorization for take and the conservation plan, and the understanding that vulnerability and recovery information on the species remains limited; it is the conclusion of the Department that the taking anticipated as a result of this project will not reduce the likelihood of survival or recovery of the species in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois.

5. Any measures required under Section 5.5(b)(6) of the Act will be performed.

Additional measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and the signature of a representative from UPRR indicates their commitment to performing those measures.

6. The public has received notice of the application and has had the opportunity to comment before the Department made any decision regarding the application.

Public notice of UPRR's request for authorization of incidental take was published in the *Breeze Courier* (official state newspaper) on September 18, 2019 and in the *Fulton Journal* on September 18, 25, and October 2, and 9, 2019. A copy of the Conservation Plan was deposited at the Schmaling Memorial Public Library allowing for public review. The deadline for public comment was November 8, 2019. Comments were received from the public on October 10, 2019. One public comment was received by the Department. The comment was transmitted to Jacobs, as representative of UPRR, on October 10, 2019. Satisfactory analysis of the comment was received by the Department on November 18, 2019. No changes to the Conservation Plan were performed based on public comment.

### **Authorization**

It is the determination of the Department that the measures to be implemented by UPRR will adequately minimize and mitigate the anticipated taking of the Higgins Eye and Butterfly associated with the Clinton Railroad Bridge Replacement Project across the Mississippi River located between Clinton, Clinton County, Iowa, and Fulton, Whiteside County, Illinois. Further, the Department has concluded that the taking authorized herein will not reduce the likelihood of

survival or recovery of the Higgins Eye and Butterfly in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species existence in Illinois.

All terms and conditions included in the aforementioned Conservation Plan submitted by UPRR to the Department are incorporated into this agreement by reference and are made a part thereof.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5] and the Administrative Rules for the Incidental Taking of Endangered and Threatened Species [Ill. Adm. Code 1080.40(b)], this authorization is issued subject to the following terms and conditions, which may include additions or modifications to the minimization and mitigation measures proposed by UPRR in the Conservation Plan:

1. This authorization is effective upon the signature of the Department and shall remain in effect for a period of **eight (8) years** from the date of the Department signature, unless terminated by written agreement of both parties.

This authorization may be revoked pursuant to the Act and Ill. Adm. Code 1080.80(b) if the Department finds that UPRR has failed to comply with any of these terms and conditions or has been responsible for the taking the Higgins Eye and Butterfly beyond that which is incidental to the replacement of UPRR's Clinton Railroad Bridge in Whiteside County, Illinois.

2. The effective period of this authorization may be altered by mutual written agreement between UPRR and the Department. The Illinois Endangered Species Protection Board shall be notified of such alteration.

Any substantive changes, including but not limited to a change in the project footprint or a change in the State-listed species which could potentially be affected, will require that a new Conservation Plan be submitted to the Department to initiate the review and public notice process as required by the Act.

3. This authorization may only be transferred upon approval and written authorization by the Department.
4. Notification to all on-site personnel shall be provided on the sensitive biological resources in the area; the identification of the Higgins Eye and Butterfly; regulations protecting the species; where the species might be found; avoidance areas; travel restrictions for equipment; how to report sightings or incidents that may involve take; the importance of avoiding take of the species; and response protocol if the species are found, including the chain of response personnel. **UPRR shall submit a copy of the education materials to the Department.**
5. The Department reserves the right of entry by its staff or representatives to inspect potential habitat and species management practices.

6. Biological consultants employed by UPRR shall hold the necessary permits for work with non-listed and listed species; these include an Illinois Department of Natural Resources (IDNR) Scientific Collection Permit as authorized under 17 Illinois Administrative Code 520, and an IDNR Endangered Species Permit as authorized under 17 Illinois Administrative Code 1070.
7. The salvage of non-listed aquatic life is hereby authorized by the Department with signature of this agreement per the Illinois Fish and Aquatic Life Code (515 ILCS 5/1-150).
8. UPRR shall notify the Department's Endangered Species Program by email correspondence of construction commencement and completion of the bridge replacement. A **project status report** shall be submitted to the Department within **90 days** following completion (defined as new bridge operational and old bridge demolished) summarizing the implementation of minimization, mitigation, and restoration measures and evaluating the effectiveness or status of those measures and shall include a project photo log. The report shall also include a map and GPS coordinates of any listed species found within the project footprint, description of any injuries or mortalities, and the disposition of any individuals that were injured or killed.
9. Notification of any live Higgins Eye or Butterfly present during the performance of the project shall be reported electronically to the Department within 48 hours of discovery accompanied by location information (photograph, map, and GPS coordinates). Any discoveries of additional State-listed species beyond those identified in this agreement **halts work** in the area where the mussel was discovered and shall be reported to the Department within 48 hours accompanied by location information. The Department and UPRR will reach agreement to move forward within 30 days to allow work to resume in the affected area.
10. UPRR shall conduct, or cause to be conducted, the following pre-construction, construction, and/or post-construction efforts:
  - a. Erosion and sediment control measures will be implemented to avoid sediment runoff into the Mississippi River. A resident engineer will provide day-to-day enforcement of implementation and maintenance of sedimentation and erosion countermeasures during construction.
  - b. Siltation will be minimized with silt fences and/or turbidity curtains, where possible based on river conditions, installed prior to the initiation of in-stream work to prevent re-suspended sediment from migrating downstream and affecting habitat for aquatic species. A designated crew will inspect and maintain the sedimentation countermeasures.
  - c. The contractor will utilize protective measures to prevent debris from falling into the river during construction of the new bridge and demolition of the existing bridge. Should any debris enter the water, the contractor will remove it as soon as practicable.

- d. To minimize contaminants from entering the river and increase the safety of the construction work site, construction activities will be planned to reduce the possibility of spills and falling construction debris. These methods will be written into the stormwater pollution prevention plan and construction plans. Emergency spill kits will be available to address any unforeseen contaminants entering the river and construction crew will be trained on how to use the kits.
- e. Adaptive management protocol has been developed and will be adhered to in the case of flooding.
- f. Following demolition, the improved roadway, marine trestles and rock causeway will be removed.
- g. A post-construction bathymetric survey will be conducted to confirm debris removal.
- h. After all construction is completed, cofferdams will be removed and the stream bottom, including Cattail Slough, will be restored to its approximate original condition and flow pattern, based on the pre-construction bathymetric survey.

11. UPRR shall conduct, or cause to be conducted, the following mussel relocation effort:

- a. Freshwater mussels shall be relocated by a qualified malacologist from discrete locations within the action area for prescribed search time durations (based on the prior mussel survey results and identified in the Conservation Plan) to suitable locations outside of the project area using approved methods for handling mussels with minimal stress. **Mussels will be relocated once prior to construction of the new bridge and once prior to demolition of the existing bridge.** The mussel relocation plan and the relocation site shall be preapproved by the Department and USFWS. The Department agrees to review the proposed relocation plan and site(s) and provide response within five (5) working days of submittal.
- b. All listed mussels shall receive a unique marking to aid in identification of these individuals during monitoring. In addition, the non-listed mussels relocated shall be etched or glitter-glued, such that they can be used to estimate survivorship of relocated mussels in later surveys.
- c. Those conducting the search must be qualified at accurate identification of freshwater mussel species. All native freshwater mussels found during this search shall be relocated to suitable habitat. Relocation sites shall be in areas with suitable stable substrates, similar unionid assemblages, and low to no zebra mussel infestations.
- d. Zebra mussels shall be removed from native freshwater mussel shells to the extent practicable and disposed of on dry land or in trash receptacles to desiccate. It is unlawful to release this injurious species back to aquatic habitat in Illinois per 17 Ill. Adm. Code 805.30(b). Equipment decontamination measures shall be deployed to prevent translocation of zebra mussels into new waterbodies.
- e. Mussels shall not be relocated when air temperatures are between 32° Fahrenheit (F) and 95°F, nor when water temperatures are below 59°F. All



mussels will be held in mesh bags suspended in the river or in containers of water changed every hour (every half-hour when air temperatures are at or above 87°F). Water in containers shall be taken from the river where the mussels were collected. No mussels shall be held for more than three (3) hours before being returned to suitable habitat in the river.

- f. The mussel relocation shall occur within one year prior to the onset of construction and again within one year prior to the onset of demolition.

**A report including, but not limited to, the survey methodology utilized, water temperature, species and abundance of mussels relocated, length and growth ring count of each individual, and a map of the species locations and relocation site shall be provided to the Department within 90 days of completion of each relocation.**

12. UPRR shall conduct, or cause to be conducted, post-construction monitoring for Higgins Eye and Butterfly in and around the project site.

- a. Quantitative mussel surveys surrounding the new pier structures and at the mussel relocation site shall be performed by a qualified malacologist during suitable survey conditions in **Years 1 and 5 after construction and demolition are completed.**
- b. The mussel survey plan shall be preapproved by the Department and USFWS.

**A report including, but not limited to, the survey methodology utilized, water temperature, species and abundance of mussels located, length and growth ring count of each individual, an estimate of mortality rates for tagged individuals, and a map of the species locations shall be provided to the Department within 90 days of completion of each survey.**

13. Mitigation to the maximum extent practicable is required by the Act. Mitigation requirements for this authorization are as follows:

- a. UPRR shall support a comprehensive Mississippi River Pool 14 mussel survey effort to map habitat and distribution of mussel resources throughout the pool. Data from this study will inform future projects by allowing resource agencies to better track cumulative impacts to mussel resources and guide future conservation efforts.
- b. The pool-wide mussel survey plan shall be preapproved by the USFWS, the Iowa Department of Natural Resources, and the Department.
- c. Proof of initiation of a contractual obligation to conduct the pool-wide mussel survey as mitigation shall be provided to the Department **within 90 days of initiation of construction of the new bridge.**
- d. The commitment to conduct the comprehensive Mississippi River Pool 14 mussel survey is void in the event that the project as described in this agreement is not initiated.

Mitigation values are based on the Department's best current understanding of the species life history needs and impact analysis relevant to the project site's proposed conceptual design elements available at the time of review.

14. All reports, notifications, and other project documentation shall be submitted to:

Illinois Department of Natural Resources  
Office of Resource Conservation  
Endangered Species Program – Incidental Take Authorization Coordinator  
One Natural Resource Way  
Springfield, IL 62702-1271

(217)557-8243  
DNR.ITAcoordinator@illinois.gov

The Department's Endangered Species Program shall provide all reports required under this agreement to the Illinois Endangered Species Protection Board and to the Department's Natural Heritage Database.

15. The UPRR official identified below is authorized to execute this agreement. Execution by UPRR indicates acceptance of all terms and conditions described in this authorization.
16. The execution of this agreement does not waive or excuse the responsibilities of UPRR to comply with other Federal, State, or local regulations, including but not limited to obtaining any required permits for the execution of this project.

*For the Illinois Department of Natural Resources:*

*For Union Pacific Railroad:*

Christopher L Young  
Mr. Christopher L. Young, Director  
Office of Resource Conservation

Patrick G. Prososki UPRR  
Mr. Patrick G. Prososki, Manager Structure Design  
Union Pacific Railroad

Nov. 16, 2020  
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Date

11-5-2020  
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Date